

The claimed invention is:

1. A commanding system for a computer, comprising:
  - a memory storing an input module that accepts input from a device in communication
  - 5 with the computer, and a control element located at a control level, the control element having a table of control bindings that connect input to associated action, each control binding in the table of control bindings including a command binding and associated command handler; and
  - a processor in data communication with the memory, the processor programmed to:
    - receive the input from the input module;
    - 10 pass the input to the control element, the control element looking up a matching command binding associated with the input in the table of control bindings; and
    - invoke a command handler associated with the matching command binding if the matching binding is found in the table of control bindings.
- 15 2. The system of claim 1, wherein the memory includes an application element located at an application level, the application element having a table of application bindings that connect input to associated action, each application binding in the table of application bindings including a command binding and associated command handler, and wherein the processor is further programmed to:
  - 20 pass the input to the application element, the application element looking up the matching command binding associated with the input in the table of application bindings; and
  - invoke a command handler associated with the matching command binding if the matching command binding is found in the table of application bindings.
- 25 3. The system of claim 1, wherein the memory further comprises a second control element with a second table of control bindings, and wherein if the matching command binding is not found in the table of control bindings, the processor is further programmed to:
  - pass the input to the second control element, the second control element looking up the matching command binding associated with the input in the table of second control bindings; and
  - 30 invoke the handler associated with the matching command binding if the matching command binding is found in the table of second control bindings.

4. The system of claim 3, wherein passing of the input from the control element to the second control element is a bubble operation, and wherein the processor is programmed to perform a plurality of bubble operations until the matching command binding is found.

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5. The system of claim 3, wherein the control element and the second control element each form a node in a tree stored in the memory, and wherein the tree includes a plurality of additional nodes, each additional node including a table of bindings.

10 6. The system of claim 3, wherein each control binding in the table of control bindings includes at least a command binding, a command, and a command handler.

7. The system of claim 6, wherein the processor is further programmed to pass a command associated with the matching command binding from the control element to the second control  
15 element.

8. The system of claim 1, wherein each control binding in the table of control bindings includes at least a command binding, a command, and a command handler.

20 9. The system of claim 1, wherein the memory further comprises an application and a plurality of control elements associated with the application, wherein each of the plurality of control elements including a table of control bindings that connects input to associated action.

10. The system of claim 9, wherein the table of control bindings of each of the plurality of  
25 control elements differs for each control element.

11. A computer readable medium having data structure stored thereon for use in commanding within a computing environment, the data structure comprising:
- a first binding table for an application element in an application layer, the first binding table including a plurality of first bindings, each binding of the first bindings including a
- 5 command binding, a command, and a command handler; and
- a second binding table for a control element in a control layer, the second binding table including a plurality of second bindings, each binding of the second bindings including a command binding, a command, and a command handler.
- 10 12. The computer readable medium as defined in claim 11, wherein the application element and the control element form nodes in a tree.
13. The computer readable medium as defined in claim 12, wherein the tree includes a plurality of additional nodes, each node of the plurality of additional nodes including a binding
- 15 table with a plurality of bindings.
14. The computer readable medium as defined in claim 11, wherein the binding of at least one of the first bindings includes a field indicating if the binding is enabled.

15. A method for commanding for a computer system, comprising:  
receiving input from a user of the computer system;  
passing the input to a control element in a control level;  
looking up a matching command binding associated with the input in a table of control  
5 bindings;  
passing the input to an application element in an application level;  
looking up the matching command binding associated with the input in a table of  
application bindings; and  
invoking a handler associated with the input if the matching command binding is found in  
10 either the table of control bindings or the table of application bindings.
16. The method of claim 15, further comprising passing the input to a parent control element  
in the control level if the matching command binding is not found in the table of control  
bindings.
- 15 17. The method of claim 15, further comprising bubbling the input up through all levels of  
control elements in a tree.
18. The method of claim 17, further comprising tunneling the matching command binding  
20 associated with the input down through the levels of control elements in the tree.
19. The method of claim 15, further comprising determining whether the matching command  
binding is enabled before invoking a handler.
- 25 20. The method of claim 15, further comprising tunneling and bubbling a command  
associated with the matching command binding through all levels of control elements in a tree.
21. A computer readable medium having computer-executable instructions for performing  
the method set forth in claim 15.